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     (71) Applicant: Sangyo Gijutsu Sogo Kenkyusho

     (72) Inventor: KIUCHI et al.

(74) Agent: Patent Attorney, Eiji MITSUEDA

     (54) [Title of the Invention] DATA DISTRIBUTION SYSTEM

(57) [Abstract]

[Object] It is an object of the present invention to make it possible to automatically erase reference data at a meeting upon participants' leaving the meeting site.

[Solving Means] The data distribution system has a mobile terminal (100), a managing unit (120), an identification label (110) attached to the mobile terminal (100), which transmits radio signals including the label number, and a label detector (130) receiving the radio signal from the identification label (110). A memory (107) records a terminal number. A recording unit (128) records a number table listing label numbers and terminal numbers in correspondence, acquires a label number from a radio signal received by the label detector (130) and transmits it to the managing unit (120). An erase code is transmitted, via a communication unit (122), to the mobile terminal (100) of the terminal number corresponding to the

acquired and transmitted label number.

[Claims]

[Claim 1] A data distribution system for distributing reference data to participants at a meeting, comprising:

an identification label which transmits a radio signal including a prescribed label number;

a managing unit having a first recording unit which records a number table listing said label numbers and terminal numbers in correspondence; and

a label detector which acquires said label number by receiving said radio signal, and transmits the acquired label number to said managing unit;

wherein said managing unit acquires the terminal number corresponding to said label number transmitted from said number table, sets said terminal number as the number of the other party of communication, and transmits the erase code.

[Claim 2] The data distribution system according to claim 1, wherein said reference data comprises a plurality of files;

said first recording unit records a file name table in which the file names of said files and flags are listed in correspondence;

said managing unit acquires a file name corresponding to a prescribed flag from said file name table, sets said terminal number acquired from said number table as the number of the other party of communication, and transmits said acquired file name and said erase code to said terminal number.

[Claim 3] The data distribution system according to claim 1, wherein said data distribution system further comprises a

movement direction detecting unit which detects the movement direction of said identification label or said participants, and transmits information of said movement direction to said managing unit;

said managing unit transmits, when said movement direction is the direction toward entrance to the hall of said meeting, a write code and said reference data to said terminal number acquired from said number table, set as the number of the other party of communication; and

transmits, when said movement direction is the direction toward withdrawal from the meeting hall, the erase code to said terminal number acquired from said number table, set as the number of the other party of communication.

[Claim 4] The data distribution system according to claim 1, further comprising a mobile terminal having a second recording unit which records said prescribed terminal number corresponding to said label number and said reference data;

wherein said mobile terminal, when receiving said erase code from said managing unit, erases said reference data from said second recording unit.

[Claim 5] The data distribution system according to claim 2, further comprising a mobile terminal having a second recording unit which records said prescribed terminal number corresponding to said label number and said reference data;

wherein said mobile terminal, when receiving said erase code and said file name from said managing unit, erases the file of said file name from said second recording unit.

[Claim 6] The data distribution system according to claim 3, further comprising a mobile terminal having a second recording unit which records said prescribed terminal number corresponding to said label number;

wherein said mobile terminal, when receiving said write code, records said reference data received by said second recording unit; and

when receiving said erase code, erases said reference data from said second recording unit.

[Claim 7] The data distribution system according to claim 3, further comprising a mobile terminal having a second recording unit which records a prescribed terminal number corresponding to said label number, and a movement direction detecting unit transmits information of said movement direction to said managing unit;

wherein said managing unit:

transmits, when said movement direction is the direction toward entrance to the hall of said meeting, said write code and said reference data to said terminal number acquired from said number table set as the number of the other party of communication; and

when said movement direction is the direction toward withdrawal from the hall of said meeting, transmits the terminal number acquired from said number table set as the number of the other party of communication;

wherein said mobile terminal:

records, when receiving said write code, said reference

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data received by said second recording unit; and

when receiving said erase code, erases said reference data from said second recording unit.

[Claim 8] The data distribution system according to any one of claims 4 to 7, wherein:

upon receipt of the erase code, said mobile terminal transmits an error code for the result of execution of processing to said managing unit; and

when said error code is not received within a prescribed period of time from said mobile terminal having transmitted said erase code, or when said error code is not a code expressing that said reference data has normally been erased, said managing unit issues a warning.

[Claim 9] A data distribution system for distributing reference data to participants to a meeting, comprising:

an identification label for transmitting a radio signal including a prescribed label number;

a managing unit having a first recording unit which records a number table containing said label numbers and terminal numbers in correspondence; and

a label detector which acquires said label number by receiving said radio signal and transmits the acquired label number to said managing unit;

said managing unit:

acquires a terminal number corresponding to said transmitted label number from said number table, and transfers a file transmitting code to said terminal number set as the number of

the other party of communication; and

when receiving a file corresponding to said file transmitting code, records said received file in correspondence to said terminal number in said first recording unit.

[Claim 10] The data distribution system according to claim 9, further comprising a mobile terminal having a second recording unit which records said prescribed terminal number corresponding to said label number;

wherein said mobile terminal, when receiving said file transmitting code from said managing unit, transmits a file corresponding to said file transmitting code to said managing unit.

[Claim 11] The data distribution system according to any one of claims 1 to 3, wherein:

said managing unit:

acquires a terminal number corresponding to said transmitted label number from said number table and transmits the file transmitting code to said terminal number set as the number of the other party of communication; and

when receiving a file corresponding to said file transmitting code, records said received file in correspondence to said terminal number in said first recording unit.

[Claim 12] The data distribution system according to any one of claims 4 to 8, wherein:

said mobile terminal transmits, upon receipt of said file

transmitting code from said managing unit, the file
corresponding to said file transmitting code to said managing
unit.

[Detailed description of the Invention]

[0001]

[Technical Field of the Invention] The present invention
relates to a data distribution system for distributing
reference data for use for explanation to participants and
questionnaire item data in a meeting in participation of many
people, automatically erasing the distributed reference data
after the completion of the meeting, and automatically
collecting answer data to the e¥questionnaire items.

[0002]

[Description of the Related Art] Along with the recent general
tendency toward more popular personal computers and projectors
permitting large-screen display, it is now the common practice
to conduct presentations at a meeting gathering many people
such as a seminar, a business talk, presentations at an
academic society conference, a press conference, by the use of
data prepared by a software tool for presentation for personal
computers in advance. Participants would therefore listen to
the oral presentation while watching the screen presented by a
projector.

[0003] When a presentation is given only through contents of
the screen resented by a projector without distribution of
personal reference materials to the participants, the
participants are required to understand the presentation at a

speed in match with the screen switching speed. When a participant has a doubt or question for a part, or does not understand a part of screen display, therefore, it is difficult to retroactively confirm or understand the problems after completion of the presentation. For the convenience of participants, and for ensuring better understanding, therefore, there is a tendency toward distributing reference data printed on paper used in presentation to participants prior to presentation.

[0004] In a presentation meeting of a new product, when providing secret information, perusal of distributed materials containing secret information is allowed only within the meeting site, and distributed materials are collected upon leaving of participants from the meeting site.

[0005] In a seminar or a presentation conference, in some cases, questionnaire sheets are distributed together with distributed reference materials, and the participants and participants are asked to fill the sheets with their impressions, the sheets of answers being collected after the completion of the meeting.

[0006]

[Problems to be Solved by the Invention] As described above, when it is necessary to collect reference data and questionnaire sheets after presentation, complete collection of relevant materials requires much time and labor, and being clumsy in collecting materials would make the participants feel unpleasant. When participants or distributed materials

are many, it is difficult to know even if some participants
carry distributed materials back. As a result, the
presentation would be limited only to oral one and display by
projector, and this may lead to impossibility of participants
to sufficiently understand the presentation.

[0007] In a case where, after once distributing materials, the
presence of some problems in part of the materials is revealed,
it may be required to collect the corresponding materials, and
collection may accompany difficulties similar to the above.

[0008] The present invention was developed to solve the above-
mentioned problems, and has an object to provide a data
distribution system which permits automatic erasure of
particular data from among data recorded in a mobile terminal
upon withdrawal of participants from the meeting site.

[0009]

[Means for Solving the Problems] The object of the present
invention is achieved through the following means:

[0010] The data distribution system (1) of the present
invention comprises an identification label which transmits a
radio signal including a prescribed label number; a managing
unit having a first recording unit which records a number
table listing said label numbers and terminal numbers in
correspondence; and a label detector which acquires the label
number by receiving the radio signal, and transmits the
acquired label number to the managing unit; wherein the
managing unit acquires the terminal number corresponding to
the label number transmitted from said number table, sets the

terminal number as the number of the other party of communication, and transmits the erase code.

[0011] The data distribution system (2) of the present invention is characterized in that, in the aforementioned data distribution system (1), the reference data comprises a plurality of files; the first recording unit records a file name table in which the file names of the files and flags are listed in correspondence; the managing unit acquires a file name corresponding to a prescribed flag from the file name table, sets the terminal number acquired from the number table as the number of the other party of communication, and transmits the acquired file name and the erase code to the terminal number.

[0012] The data distribution system (3) of the present invention is characterized in that, in the aforementioned data distribution system (1), the aforementioned data distribution system (1) further comprises a movement direction detecting unit which detects the movement direction of the identification label or the participants, and transmits information of the movement direction to the managing unit; the managing unit transmits, when the movement direction is the direction toward entrance to the hall of the meeting, a write code and the reference data to the terminal number acquired from the number table, set as the number of the other party of communication; and transmits, when the movement direction is the direction toward withdrawal from the meeting hall, the erase code to the terminal number acquired from the

number table, set as the number of the other party of communication.

[0013] The data distribution system (4) of the present invention is characterized in that the aforementioned data distribution system (1) further comprises a mobile terminal having a second recording unit which records the prescribed terminal number corresponding to the label number and the reference data; wherein the mobile terminal, when receiving the erase code from the managing unit, erases the reference data from the second recording unit.

[0014] The data distribution system (5) of the present invention is characterized in that the aforementioned data distribution system (2) further comprises a mobile terminal having a second recording unit which records the prescribed terminal number corresponding to the label number and the reference data; wherein the mobile terminal, when receiving the erase code and the file name from the managing unit, erases the file of the file name from the second recording unit.

[0015] The data distribution system (6) of the present invention is characterized in that the aforementioned data distribution system (3) further comprises a mobile terminal having a second recording unit which records the prescribed terminal number corresponding to the label number; wherein the mobile terminal, when receiving the write code, records the reference data received by the second recording unit; and when receiving the erase code, erases the reference data from the

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second recording unit.

[0016] The data distribution system (7) of the present invention is characterized in that the aforementioned data distribution system (1) further comprises a mobile terminal having a second recording unit which records a prescribed terminal number corresponding to the label number, and a movement direction detecting unit transmits information of the movement direction to the managing unit; wherein the managing unit transmits, when the movement direction is the direction toward entrance to the hall of the meeting, the write code and the reference data to the terminal number acquired from the number table set as the number of the other party of communication; and when the movement direction is the direction toward withdrawal from the hall of the meeting, transmits the terminal number acquired from the number table set as the number of the other party of communication; wherein the mobile terminal records, when receiving the write code, said reference data received by the second recording unit; and when receiving the erase code, erases the reference data from the second recording unit.

[0017] The data distribution system (8) of the present invention is characterized in that, in any one of the aforementioned data distribution systems (4) to (7), upon receipt of the erase code, the mobile terminal transmits an error code for the result of execution of processing to the managing unit; and when the error code is not received within a prescribed period of time from the mobile terminal having

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transmitted the erase code, or when the error code is not a code expressing that the reference data has normally been erased, the managing unit issues a warning.

[0018] The data distribution system (9) of the present invention is a data distribution system for distributing reference data to participants to a meeting, and characterized in that the data distribution system (9) comprises an identification label for transmitting a radio signal including a prescribed label number; a managing unit having a first recording unit which records a number table containing the label numbers and terminal numbers in correspondence; and a label detector which acquires the label number by receiving the radio signal and transmits the acquired label number to the managing unit; the managing unit acquires a terminal number corresponding to the transmitted label number from the number table, and transfers a file transmitting code to the terminal number set as the number of the other party of communication; and when receiving a file corresponding to the file transmitting code, records the received file in correspondence to the terminal number in the first recording unit.

[0019] The data distribution system (10) of the present invention is characterized in that the aforementioned data distribution system (9) further comprises a mobile terminal having a second recording unit which records the prescribed terminal number corresponding to the label number; wherein the mobile terminal, when receiving the file transmitting code

from the managing unit, transmits a file corresponding to the
file transmitting code to the managing unit.

[0020] The data distribution system (11) of the present
invention is characterized in that, in any one of the
aforementioned data distribution systems (1) to (3), the
managing unit acquires a terminal number corresponding to the
transmitted label number from the number table and transmits
the file transmitting code to the terminal number set as the
number of the other party of communication; and

when receiving a file corresponding to the file transmitting
code, records the received file in correspondence to the
terminal number in the first recording unit.

[0021] The data distribution system (12) of the present
invention is characterized in that, in any one of the
aforementioned data distribution systems (4) to (8), the
mobile terminal transmits, upon receipt of the file
transmitting code from the managing unit, the file
corresponding to the file transmitting code to the managing
unit.

[0022]

[Embodiments] Embodiments of the present invention will now be
described with reference to the attached drawings.

[0023] Fig. 1 is a block diagram illustrating a schematic
configuration of the data distribution system of an embodiment
of the present invention. The data distribution system has a
configuration comprising a mobile terminal 100, an
identification label 110, a managing unit 120, and a label

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detector 130.

[0024] The mobile terminal 100 has a configuration comprising a processing unit (hereinafter referred to as a "CPU") 101, a communication unit 102, an interface unit 103, an operating unit 104, a displaying unit 105, a data bus 106, a memory 107, and an identification label 110 affixed to the outside thereof. The managing unit 120 has a configuration comprising a processing unit (hereinafter referred to as a CPU") 121, a communication unit 122, an interface unit 123, an operating unit 124, a display unit 125, a data bus 126, a memory 127, and a recording unit 128.

[0025] In each of the mobile terminals 100 and the managing unit 120, data exchange is carried out via the data buses 106 and 126. The mobile terminal 100 and the managing unit 120 can mutually exchange information by radio communication on the basis of a common communication specification via the communication units 102 and 123. In Fig. 1, RF represents radio wave.

[0026] The identification label 110 has an antenna, an oscillator, a power supply and an IC chip having a memory (none are shown), and can transmit label numbers recorded in the memory in advance by means of a radio signal.

[0027] As an identification label 110, a label used by affixing to an article to be managed such as a CD or a video tape in lending and inventory control of CDs or video tapes is applicable. As identification labels, label-shaped ones formed from a soft material, or various shapes including hard blocks

are applicable. Since the power supply of the identification label 110 is small in capacity, the reach of wave transmitted by the identification label is limited to a short distance of about 1 to 2 m.

[0028] The label detector 130 can receive a radio signal including a label number transmitted from the identification label 110 and acquire the label number from the received radio signal. The label detector 130 is connected to the managing unit 120 and transmits a label number to the managing unit 120 in accordance with a prescribed communication specification.

[0029] There are a plurality of mobile terminals 100 to which identification labels 110 imparted different label numbers are affixed, whereas only a single typical one is shown in Fig. 1. A program describing the processing to be performed by the CPU 101, the terminal number for specifying the mobile terminal 100 in communication with the managing unit 120, and the reference data to be presented to the participants are recorded in the nonvolatile memory portion (not shown) of the memory 107 of the mobile terminal 100.

[0030] When the power supply of the mobile terminal 100 is turned on, the CPU 101 reads out a prescribed program from the memory 107 and executes it. By means of this program, the CPU 101 reads out reference data from the memory 107, converts it into a prescribed format, displays the data on the display unit 105 via the interface unit 103, and then, is ready to accept user's operation via the operating unit 104. Simultaneously with this, the CPU 101 reads out the

communication programs for communication with the managing

unit 120 from the memory 107 and executes these pluralities of

programs as a multitask.

[0031] When power is turned on for the managing unit 120, the

CPU 121 reads out a management program of the mobile terminal

100 from the recording unit and executes it. By means of this

management program, the CPU 121 reads out data to be presented

to the manager from the recording unit 128, converts the data

into a prescribed format, displays the data on the display

unit 125 via the interface unit 123, and then becomes ready to

accept manager's operation via the operating unit 124. The

managing unit 120 executes communication via the mobile

terminal 100 and acquisition of information from the label

detector 130.

[0032] The terminal number assigned to the mobile terminal 100

and the label number assigned to the identification label 110

are recorded in correspondence in the form of the number table

in the recording unit 128 of the managing unit 120. The CPU

121 temporarily stores the programs and data read out from the

recording unit 128 in the memory 127, and applies necessary

processing on the memory 127.

[0033] The mobile terminals 100 in which reference data is

recorded in advance are distributed to the participants at the

reception desk of the seminar hall or the like. By

participant's turning the power on for the mobile terminal 100

in the hall, the program for displaying the reference data of

the mobile terminal is started, and the participants can thus

refer to the reference data displayed on the display unit 105.

[0034] When the participants are allowed to carry back the mobile terminal 100 distributed at a paid seminar or the like, or when lending of the mobile terminal 100 is allowed for a limited period of time, data not allowed to carry back contained in the reference data is automatically erased upon withdrawal from the meeting.

[0035] Fig. 2 is a flowchart illustrating the processing performed by the CPU 121 of the managing unit 120 in the processing of automatically erasing the reference data recorded in advance in the mobile terminal 100. The automatically erasing process of reference data of the mobile terminal 100 will now be described with reference to Fig. 2.

[0036] Assume a case where reference data comprising a plurality of files including files having a file name file01 is recorded in a mobile terminal 100 having a label name L0 and a terminal number ID0, and a participant carrying the mobile terminal 100 in a power-on state approaches the label detector 130 installed near the exit for withdrawal from the meeting site.

[0037] In step 201, it is determined whether or not a label number transmitted from the label detector 130 is acquired via the interface unit 123. The label number is acquired, as described above, from the signal received from the identification label 110 of the mobile terminal 100 which the label detector 130 approaches, and transmitted to the managing unit 120. The determination is repeated until a label number

is received. Upon determining that a label is received, the process advances to step 202.

[0038] In step 202, the number table recorded in advance in the recording unit 128 is retrieved, and the terminal number ID0 corresponding to the acquired label number L0 is determined.

[0039] In step 203, the file name to be erased is acquired by referring to the file name table of the reference data recorded in the recording unit 128 shown in Fig. 3. In Fig. 3, the file names and the flags composing the reference data are recorded in correspondence, and the file name for which the flag is set at 1 represents the file to be erased. In Fig. 3, file01 is set as the file to be erased. The CPU 121 sets the terminal number ID0 determined in step 202 as the terminal number of the other party of communication, and transmits the erase code as the instruction code and file01 as the file name to be erased. The mobile terminal 100 of the terminal number ID0 receives data transmitted from the managing unit 120 and acquires the erase code and the file name file01 to be erased, thereby erasing only the corresponding file from the reference data recorded in the memory 107. The mobile terminal 100 transmits the error code "0" representing the completion to the managing unit when normally completing erasure of the specified file, and when an error such as failure of erasure occurs, transmits an error code other than "0" to the managing unit in response to the contents of the error.

[0040] In step 204, the current time is obtained from clock

means (not shown) provided in the managing unit 120, and is set to variable T_S.

[0041] In step 205, it is determined whether or not reference data from the mobile terminal 100 (terminal number ID0) having received the erase code in step 203 has been received. When it is determined that such response data has been received, the process advances to step 206. If it is determined that the data has not been received, the process goes to step 207. For example, when the participant approaches the label detector in a state in which power of the mobile terminal 100 is turned off, the mobile terminal 100 cannot execute erasure of data, and the managing unit 120 never receives the response data.

[0042] In step 206, it is determined whether or not an error code "0" meaning the completion of erasure has been received. When an error code "0" is determined to have been received, the process advances to step "210", and when a code other than "0" is determined to have been received, the process goes to step 209.

[0043] In step 207, the current point in time is acquired from the clock means and set to variable T.

[0044] In step 208, it is determined whether or not the difference between T and T_S is larger than a prescribed value ΔT. If it is determined to be larger than ΔT. If it is determined to be larger than ΔT, i.e., when it is determined that a period of time longer than ΔT has passed after transmission of the erase code in step 203, the process advances to step 209. If the difference between T and T_S is

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smaller than ΔT, i.e., a period of time longer than ΔT is determined to have not as yet elapsed after transmission of the erase code, the process goes back to step 205, and steps 205 to 208 are repeated.

[0045] In step 209, a warning is displayed on the display unit 125. Specifically, when no code can be received from the mobile terminal 100 of the terminal number ID0, or when the received error code is other than "0", a warning is displayed. At this point in time, a warning corresponding to the receiving status or the received error code is displayed.

[0046] In step 210, it is determined whether or not an end instruction is received. Steps 201 to 209 are repeated until an end instruction is determined to be issued.

[0047] Through these steps, only files prohibited to carry back are automatically erased from the reference data recorded in the memory 107 of the mobile terminal 100 approaching the label detector 130.

[0048] When the mobile terminal 100 is carried by a participant in a power-off state, label 110 is normally detected by the label detector 130. However, since the managing unit 120 never receives the response code, the manager can be urged to stop the withdrawing participant by displaying a warning.

[0049] When the mobile terminal 100 fails to erase a specified file, the action to be taken by the manager is facilitated by displaying information corresponding to the received error code simultaneously with the warning.

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[0050] A case where, at the reception of the hall of a seminar or the like, mobile terminals 100 recording questionnaire item data in addition to reference data in advance are distributed to participants, and answers to the questionnaire are automatically collected upon participants' withdrawal from the hall will now be described. As is the aforementioned case of automatic erasure of reference data, it is assumed that the questionnaire item data is recorded in a prescribed file name (qfile) in the mobile terminal 100 having a label number L0 and a terminal number ID0.

[0051] When the mobile terminals 100 are turned on in the meeting hall, the CPU 101 reads out a prescribed program from the memory 107 and executes it. Under the effect of this program, the CPU 101 can read out the questionnaire item data (qfile) from the memory 107, and after displaying it in a prescribed format on the display unit 105, the CPU 101 becomes ready to accept operation from the participants via the operating unit 104. Simultaneously with this, the CPU 101 reads out also a communication program for communication with the managing unit 120 also from the memory 107 and executes these pluralities of programs as a multitask.

[0052] During the break or the like, the participants enter answers to the questionnaire items by the use of the operating unit 104 and perform recording operation. As a result, response data is stored by overwriting in the file qfile on the memory 107, together with the questionnaire item data, and this forms a response file.

[0053]   Fig. 4 is a flowchart illustrating the processing performed by the CPU 121 of the managing unit 120 in collecting responses of participants to the questionnaire, i.e., collecting response files. Assume that the participants carrying the mobile terminals 100 approach the label detector 130 installed near the exit for withdrawal from the hall.

[0054]   As in the case of automatic erasure of reference data, it is determined whether or not label numbers have been received in step 401, and terminal numbers ID0 corresponding to the acquired label numbers L0 are determined in step 402.

[0055]   In step 403, the terminal number ID0 determined in step 402 is set as the terminal number of the other party of communication, and the transmission code serving as an instruction code and qfile as the covered file name are transmitted. The mobile terminal 100 of the terminal number ID0 sets the number of the managing unit as the terminal number of the other party of communication, and transmits the file qfile, after receiving transmission data from the managing unit 120, acquiring the transmission code and the file name of file to be transmitted, and confirming the presence of the corresponding file from among the files recorded in the memory 107.

[0056]   In step 404, the current time is acquired from clock means (not shown) provided in the managing unit 120, and set to variable T_S.

[0057]   In step 405, it is determined whether or not the response file qfile has been received from the mobile terminal

100 (terminal number ID0) having the transmission code in step

403. If received, the file received in correspondence to the

terminal number ID0 is recorded in the recording unit 128, and

the process goes to step 408. If not, process advances to step

406. For example, by adding the terminal number ID0 to the

received file name using the resulting name as a new file name,

received files can be recorded while showing correspondence

for each terminal.

[0058] In steps 406 and 407, as in the case of automatic

erasure of the reference data (steps 207 and 208 in Fig. 2),

transmission of response files from the mobile terminals 100

(terminal number ID0) is waited for by a prescribed period of

time (ΔT) from transmission of the instruction code

(transmission code). In step 407, if the prescribed period of

time (ΔT) is determined to have elapsed, the process goes to

step 408.

[0059] In step 407, it is determined whether or not an end

instruction has been received. Steps 401 to 408 are repeated

until the end instruction is determined to have been received.

[0060] Through these steps mentioned above, it is possible to

automatically collect response files qfile recorded in the

memory 107 of the mobile terminals 100 approaching the label

detector 130.

[0061] A questionnaire requires usually arbitrary answer in

many cases. In the aforementioned description, therefore, no

particular action is taken even when response files cannot be

normally received by the managing unit 120 for some reason or

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other. If it is required to collect response files without fail, it is possible to take an action such as issuance of a warning as in the case of automatic erasure of the reference data as described above.

[0062] Some of the participants may withdraw from the meeting site without answering to the questionnaire. In the flowchart shown in Fig. 3, in this case, the qfile in the original state is transmitted. In order to avoid this useless transmission of data, information showing presence or absence of update of qfile is recorded in the memory 107 of the mobile terminal 100. Prior to transmitting an instruction code (transmission code) in step 403, the information showing the presence or absence of update of qfile is transmitted by the mobile terminal 100, and only when it is determined that qfile is updated from this information, step 403 and the subsequent processes can be applied. Determination regarding update of qfile is possible also by causing the mobile terminal to transmit information such as time stamp and file size of qfile and determining whether or nor the information is different from the initial values. When the qfile is not updated, this permits achievement with data transmission of only a few bytes, leading to a more efficient operation.

[0063] In the above-mentioned processing, the response file qfile remains stored in the memory 107 of the mobile terminal 100. After receiving the transmission code by the mobile terminal 100 and transmission of the response file qfile to the managing unit 120, it is also possible to delete the

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response file qfile from the memory 107.

[0064] The file to be collected is not limited to one recording a questionnaire or the like in advance, but it is also possible to collect an arbitrary file prepared anew by the participant. For example, a file to be presented to participants with predetermined items and form in the mobile terminal 100, but the participants may be asked to store comment and proposals entered in an arbitrary form with an arbitrary file name. In this case, when mobile terminals carried by the withdrawing participants receive the transmission code, a file name newly created may be detected to transmit the file to the managing unit 120.

[0065] Furthermore, automatic erasure of the reference data and automatic collection of files described above can be simultaneously accomplished upon withdrawal of the participants.

[0066] In the aforementioned processing, the time ΔT for waiting for response from the mobile terminal 100 or receiving of file should preferably be set at a short period of time such as about a second so that a participant can be caused to stop near the label detector.

[0067] When the received code is determined to be an error other than "0" in step 206, a modification such as transmitting repeatedly the erase code until the lapse of a prescribed time ΔT can be made in the flowchart of Fig. 2, without advancing immediately to step 209 for issuing a warning.

[0068] Even when the label 110 is incorporated in the mobile
terminal 100 in a state capable of transmitting radio wave so
as to prevent detachment from the mobile terminal 100, the
label 110 can display the same functions.

[0069] A case where a particular file is to be erased from the
reference data composed of a plurality of files has been
described above. When the reference data contains only one
file, it suffices to transmit the erase code.

[0070] It is possible to specify a file to be erased for each
mobile terminal 100 by recording a file table of the reference
data in the recording unit 128 for each terminal number. For
example, the erase code is not transmitted for files for which
participants applied upon distributing the mobile terminals
100 at entrance or upon withdrawal of the participants. It is
thus possible to charge a fee for files not erased of which
carrying back is allowed.

[0071] It is also possible to transmit reference data or
questionnaire item data from the managing unit 120 upon
entrance of the participant and record the data in the memory
107 without recording the data in advance in the memory 107 of
the mobile terminal 100. For example, this is achievable by
providing separate entrance and exit to and from the hall,
installing a managing unit 120 and a label detector 130 for
each entrance and exit, and as in the flowchart of Fig. 2,
transmitting to the mobile terminal dedicated at the entrance
the prescribed reference data or questionnaire item data, and
an instruction code corresponding to the processing for

recording from the managing unit 120. If the entrance and exit are combined into one, means to discriminating entrance of the mobile terminal and departure thereof from the hall such as a plurality of of sensors are installed. When the mobile terminal 100 enters the hall, reference data or questionnaire item data and the instruction code of record are transmitted. When the mobile terminal 100 leaves the hall, instruction code to erase reference data or the transmission code can be transmitted to the mobile terminal 100. Entrance of the mobile terminal 100 and leaving thereof from the hall can be determined from the moving direction of the identification label 110 or the moving direction of the participant.

[0072] A case where dedicated mobile terminals 100 are distributed to participants has been described above. The same processing is applicable also by use of a notebook-type personal computer or a mobile terminal carried in by a participant. In this case, an identification label is affixed to the outside of the notebook-type personal computer or the mobile terminal brought by the participant. An interface unit for communicating with the managing unit 120 is mounted, and programs for recording and managing the reference data or questionnaire item data must be installed.

[0073]

[Advantages] According to the data distribution system of the present invention recited in any one of claims 1 to 7, it is possible to automatically erase only data which is not allowed to carry back by the participant among the reference data

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recorded in the distributed mobile terminals, without imposing

a complicated procedure on the participant, thus permitting

avoidance of carry-back of secret information.

[0074] It is also possible to retain files which individual

participants desire to carry back without erasing, and provide

a service of charging a fee for the thus retained files.

[0075] According to the data distribution system of the

present invention recited in claim 8, a warning is displayed

when a code showing the completion of erasure is not received

within a limited period of time from the mobile terminal

having transmitted the erase code. It is thus possible to

cause the participant carrying this mobile terminal to come

out during the participant is near the label detector.

[0076] By displaying a warning in response to an error code,

it is possible to clearly show the cause of a problem or an

action to be taken to the manager.

[0077] According to the data distribution system of the

present invention recited in any one of claims 9 to 12, it is

possible to automatically collect response data to the

questionnaire item data recorded in the distributed mobile

terminals without causing trouble to the participants.

[Brief description of the Drawings]

[Fig. 1] Fig. 1 is a block diagram illustrating a schematic

configuration of the data distribution system of an embodiment

of the present invention.

[Fig. 2] Fig. 2 is a flowchart illustrating the processing

carried out by the CPU 121 of the managing unit 120 of the

data distribution system of an embodiment of the present invention.

[Fig. 3] Fig. 3 is a table recording file names and flags in correspondence forming reference data.

[Fig. 4] Fig. 4 is a flowchart illustrating the processing carried out in collection of response files by the CPU 121 of the managing unit 120 of the data distribution system of an embodiment of the present invention.

[Reference Numerals]

100:        Mobile terminal

101, 121:   Processing unit (CPU)

102, 122:   Communication unit

103, 123:   Interface unit

104, 124:   Operating unit

105, 125:   Display unit

106, 126:   Data bus

107, 127:   Memory

110:        Identification label

120:        Managing unit

128:        Recording unit

130:        Label detector

RF: Radio wave

FIG. 2

(1) START

(2) NO

(3) YES

(4) NO

(5) YES

(6) NO

(7) YES

(8) NO

(9) YES

(10) NO

(11) YES

(12) END

S201:   IS LABEL NUMBER ACQUIRED?

S202:   DETERMINE TERMINAL NO.

S203:   TRANSMIT INSSTRUCTION CODE

S204:   SET T_S AS CURRENT TIME

S205:   HAS RESPONSE BEEN RECEIVED?

S206:   RROR CODE = 0?

S207:   SET T AS CURRENT TIME

S208: $T - T_S \geq T$?

S209:   OCCURRENCE OF WARNING

S210:   END?

FIG. 3

(1) FILE NAME

(2) FLAG

FIG. 4

(1) START

(2) NO

(3) YES

(4) NO

(5) YES

(6) NO

(7) YES

(8) NO

(9) YES

(10) END

S401:   IS LABEL NUMBER ACQUIRED?

S402:   DETERMINE TERMINAL NUMBER

S403:   TRANSMIT INSTRUCTION CODE

S404:   SET T_S AS CURRENT TIME

S405:   HAS RESPONSE FILE BEEN RECEIVED

S406:   SET T AS CURRENT TIME

S407: $T - T_S \geq T$?

S408:   END?